

# **SPECIFICATION**

## **Title of the Invention**

### **CONTAINER WITH CO-MOLDED RECEPTACLE**

## **Background of the Invention**

The present invention generally relates to plastic containers. More particularly, the present invention relates to multi-chamber containers.

As is known, containers are commonly used with material delivery devices such as spout extensions, spray nozzles and funnels. For example, a spray nozzle having a threaded fitting can be secured to the threaded opening of a container. Further, the spray nozzle can be connected to the fitting via a hose to provide greater flexibility for the user.

In known containers, the material delivery device is detached from the container after use and stored separately.

## **Summary of the Invention**

The present disclosure provides one or more inventions directed to improvements in containers. These improvements can be practiced jointly or separately.

To this end, in an embodiment, there is provided a container comprising a first container portion having a wall defining an interior and an exterior of the first container portion; and a second container portion having a wall defining an interior and an exterior of the second container portion, and a substantially open top portion, the exterior of the second container portion being spaced apart from the exterior of the first container portion via a connecting portion, the first container portion, second container portion and connecting portion being co-molded.

In an embodiment, the first container portion has an inwardly directed depression formed in a lower portion of the wall of the first container portion.

In an embodiment, the second container portion has an inwardly directed depression formed in a lower portion of the wall of the second container portion.

In an embodiment, the connecting portion is formed at a height above the bottom of the first container portion.

In an embodiment, the second container portion has at least one reinforcement formed in the wall of the second container portion. The reinforcement can comprise, for example, at least one rib formed in the wall of the second container portion, at least one crease formed in the wall of the second container portion, and/or a lip formed at or around a top of the wall of the second container portion.

In an embodiment, the first container portion comprises a plurality of chambers.

In an embodiment, the connecting portion comprises at least one reinforcement formed therein.

In an embodiment, the container is used with a material delivery device, wherein the material delivery device is at least one of a spout extension, a spray nozzle and a funnel.

There is also provided in an embodiment, a method of forming a container. The method comprising the steps of: co-molding a wall defining an interior and an exterior of a first container portion, a wall defining an interior and an exterior of a second container portion having a substantially open top portion, and a connecting portion integral to and spacing apart the exteriors of the first container portion and the second container portion.

These and other features of the present invention will become clearer with reference to the following detailed description of the presently preferred embodiments and accompanying drawings.

### **Description of the Drawings**

FIG. 1 is a side elevational view of a container constructed in accordance with the present invention.

FIG. 2 is a top plan view of the container of FIG. 1.

FIG. 3 is a rear elevational view of the container of FIG. 1.

FIG. 4 is a cross-sectional view taken along the line 4-4 in FIG. 1 of an embodiment of a connecting portion.

FIG. 5 is a cross-sectional view taken along the line 4-4 in FIG. 1 of an alternate embodiment of the connecting portion.

FIG. 6 is a cross-sectional view taken along the line 4-4 in FIG. 1 of another alternate embodiment of the connecting portion.

### **Detailed Description of the Presently Preferred Embodiments**

As discussed above, there is provided a container with a co-molded receptacle.

In FIG. 1, there is illustrated a container 10 constructed in accordance with the present invention. A first container portion 12 comprises a first wall 14 defining a vessel for holding materials. The first wall 14 has an interior 18 and an exterior 16.

The first container portion 12 has an opening 20. As illustrated, the opening 20 is threaded to engage, for example, a closure or material delivery device. Alternatively, the opening 20 can comprise another means for engagement, such as a lip.

The first container portion 12 also has an integrated handle portion 22.

In an embodiment, the first container portion 12 has a side depression 24 or "speed stripe" formed in the wall 14 of the first container portion 12. As illustrated, the side depression 24 is wider toward a rear of the first container portion 12 and narrower toward a front of the first container portion 12. The side depression 24 is positioned in the wall 14 at a

height above the bottom of the first container portion 12. The side depression 24 provides improved rigidity and improved aesthetic characteristics to the container 10.

The first container portion 12 can also have a first bottom inwardly depressed region 26. The first bottom inwardly depressed region 26 is formed in the wall 14 at a bottom side of the first container portion 12.

In an embodiment, the first container portion 12 comprises a plurality of vessel chambers.

The container 10 also comprises a second container portion 28. The second container portion 28 comprises a second wall 30 defining an interior 32 and an exterior 34 of the second container portion 28. The second container portion 28 has a substantially open top portion 48 that does not substantially recess toward an interior of the second container portion 28. For example, the top portion 48 of the second container portion 28 does not substantially recess toward the interior of the second container portion 28 to accommodate threads to engage a threaded closure. In other words, the open area of the substantially open top portion 48 is substantially the same as the open area of an average cross-section of the second wall 30.

In an embodiment, the second container portion 28 also comprises a depression 36 or "speed stripe" formed in the wall 30 of the second container portion 28. As illustrated, the depression 36 is positioned in the wall 30 at a height above the bottom of the second container portion 28. Similar to the side depression 24 of the first container portion 12, the depression 36 of the second container portion 28 provides improved rigidity and improved aesthetic characteristics to the container 10.

Similar to the first container portion 12, the second container portion 28 can also have a second bottom inwardly depressed region 38. The second bottom inwardly depressed region 38 is formed in the wall 30 at a bottom side of the second container portion 28.

In an embodiment, at least one reinforcement 40 is formed in the wall 30 of the second container portion 28. The reinforcement 40 is formed at or near a top of the second container portion 28 and can be, for example, an outwardly projecting rib, an inwardly recessed crease, or a lip. The reinforcement 40 improves the strength and aesthetic characteristics of the second container portion 28. As the reinforcement 40 is located near the top of the second container portion 28, the reinforcement 40 provides added strength to resist the weight of material delivery devices that may be set into the second container portion 28.

The first container portion 12 and the second container portion 28 are co-molded as a single unit with a co-molded connecting portion 42 connecting them. The connecting portion 42 is formed unitarily with the walls 16 and 30 of the first container portion 12 and the second container portion 28, respectively. In other words, the first container portion 12, the second container portion 28, and the connecting portion 42 are co-molded as a continuous, unitary device.

The connecting portion 42 can be solid throughout or can comprise one or more structural formations, such as a pattern or web, in its cross-section. In FIG. 4, there is illustrated a cross-sectional view taken along the line 4-4 in FIG. 1 of an embodiment of the connecting portion 42, wherein the connecting portion 42 has a linear cross-section.

In FIG. 5, there is illustrated a cross-sectional view taken along the line 4-4 in FIG. 1 of an alternate embodiment of the connecting portion 42. In this embodiment, the connecting portion 42 has a curvilinear cross-section.

In FIG. 6, there is illustrated a cross-sectional view taken along the line 4-4 in FIG. 1 of another alternate embodiment of the connecting portion 42. In this embodiment, the connecting portion 42 has a "beaded" cross-sectional shape.

In the illustrated embodiment, the connecting portion 42 is formed such that it is positioned at a height above the bottom of the first container portion 12. Alternatively, the connecting portion 42 can be positioned at a height which is flush to the bottom of the first container portion 12 or to the height of the first or second bottom inwardly depressed regions 26 and 38.

Further, the second container portion 28 is shown to be formed at a rear of the wall 14 of the first container portion 12. Alternatively, the second container portion 28 can be formed to any portion of the wall 14. For example, the second container portion 28 can be connected to the front of the first container portion 12 via the connecting portion 42.

FIG. 2 illustrates a top plan view of the container 10. FIG. 3 illustrates a rear elevational view of the container.

The container 10 is not limited to the illustrated shapes and topologies and can embody shapes and/or topologies different from those illustrated. For example, the second container portion 28 can have a partially or fully open bottom. Further, the first container portion 12 can be without a handle portion 22.

Thus, the container 10 beneficially provides both a first container portion 12 wherein materials can be contained and a second container portion 28 for storing, for example, a material delivery device.

The container 10 can be formed by, for example, blow molding.

According to the present method, the container 10 is formed by co-molding the wall 18 defining the interior 18 and the exterior 16 of the a first container portion 12, the wall 30

defining the interior 32 and the exterior 34 of the second container portion 28, and the connecting portion 42 integral to and spacing apart the exteriors, 16 and 34 respectively, of the first container portion 12 and the second container portion 28.

As the first and second container portions 12 and 28 are co-molded, the present container 10 has reduced cost and improved strength compared to containers wherein a second container portion may be attached to a first container portion. Further, the present container 10 provides a great convenience in permitting the storage of material delivery devices in the second container portion 28.

As is apparent from the foregoing specification, the present invention is susceptible to being embodied with various alterations and modifications which may differ particularly from those that have been described in the preceding specification and description. It should be understood that it is desired to embody within the scope of the patent warranted herein all such modifications as reasonably and properly come within the scope of the presently defined contribution to the art.